

LATERAL CERVICAL THYMIC CYST*

*Tahir E. Patiroğlu MD**, Mehmet Soysaraç MD****

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The congenital thymic cyst, which is a rare tumor, can be situated in the neck or in the mediastinum¹⁻³. Embryologically the thymus gland originates from the third branchial pouch bilaterally at the sixth week of fetal life. During the subsequent three weeks these empty pouches become cellular and descend into the mediastinum. Fragments of thymic tissue may persist anywhere along the normal route of the gland as it passes into the anterior mediastinum²⁻⁶. Such pieces of thymic tissue are more prone to the formation of cysts than is the normally located gland³.

In 1901, for the first time, Pollosson and Piery⁷ removed a cervical thymic cyst from an 18-month-old boy. Between then and 1980, 73 more cases of cervical thymic cyst were recorded^{1,4,6}. In this paper, a further case, that of a 6-year-old boy with characteristic clinical and pathological features, is reported.

Case Report

Clinical findings. A 6-year-old boy was admitted with a painless mass as big as a fist in the right side of his neck. A small swelling had first been noted three years previously, and this had gradually enlarged to the present size. When expiration was forced and when the child coughed or cried, there was a further apparent increase in the bulk.

Examination revealed a soft, mobile, painless and probably cystic mass on the right side of the neck descending from the angle of the mandible to the midclavicular line.

Routine laboratory tests and x-ray of the chest revealed no abnormalities.

Preoperative diagnosis was laryngocele; surgical exploration was then carried out. An encapsulated, gray-red colored cystic mass was exposed. The tumor was found to lie against the carotid sheath, and the lower portion of the mass extended downward into the mediastinum as a solid cord. This solid cord was cut, and the mass was removed.

* From Erciyes University Faculty of Medicine, Kayseri.

** Associate Professor of Pathology, Erciyes University Faculty of Medicine.

*** Otolaryngologist, Kayseri.



Figure 1.
Simple cuboidal epithelium and thymic tissue (HE $\times$ 36).

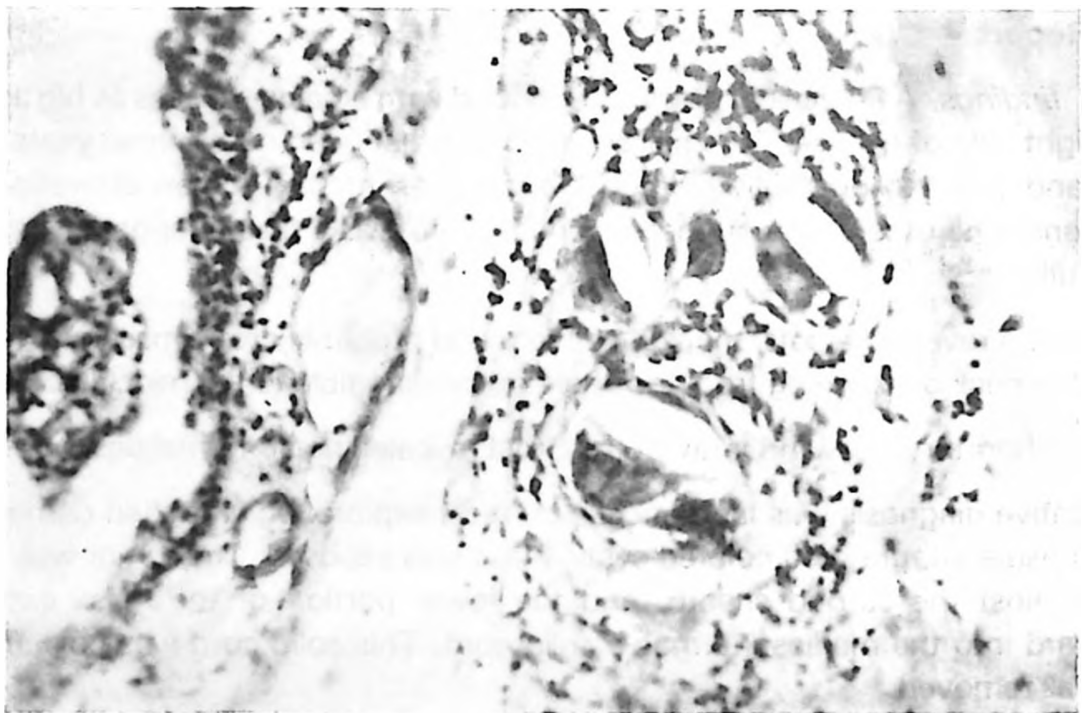


Figure 2.
Cholesterol clefts in the wall of the cyst surrounded by foreign body giant cells and a few inflammatory cells and stratified epithelium (HE $\times$ 160).

Pathological findings. Gross examination revealed a gray-red lobulated tumor measuring $12 \times 4 \times 2$ cm. On section, the specimen was found to be multilocular with several cysts filled with a clear fluid. The walls consisted of firm white tissue varying in thickness from 1 to 10 millimeters.

In microscopy the cysts were seen to be lined with flattened cuboidal, columnar and even squamous epithelium. There was an abundance of thymic tissue and beneath the epithelium, cortical and medullary areas containing Hassall's corpuscles had formed (Figure 1). In addition, cholesterol crystals were seen embedded in the wall of the cyst where they were surrounded by histiocytes and foreign body giant cells and a few inflammatory cells (Figure 2).

A benign cervical thymic cyst was diagnosed.

Discussion

Most cases of cervical thymic cysts have been recognized during childhood, 75% of the patients being under twenty years old⁴. Males have been affected twice as often as females^{2,3}. Seventy percent of the patients were affected on the left side of the neck, 23% on the right, and the remainder had midline or pharyngeal masses^{2,4}.

Eighty percent complained of a painless mass preoperatively; the remainder had dyspnea, dysphagia and hoarseness. In most cases, symptoms were present for several months prior to operation⁴.

Common preoperative diagnoses were branchial cleft cyst, cystic hygroma, thyroglossal duct cyst, lymph node, thyroid nodule and thymus^{2,4,5,8}.

Fifty percent of cervical thymic cysts seem to spread to the mediastinal thymus. There may be a direct extension of the cyst substernally or by connection to a solid cord or there may be a vestigial remnant of thymic tissue which extends into the thorax^{2,4}.

Thymic cysts vary in size from 1 cm to 15 cm across and are commonly multilocular. The wall of the cyst varies in thickness from a few millimeters to as much as 1 cm²⁻⁵. Mediastinal cysts are generally round in shape, whereas many of those found in the neck are tubular, their longest axis being oriented along the inner aspect of the carotid sheath²⁻⁴.

Grossly, uncomplicated cysts have a thin fibrous wall, a smooth inner lining and their content ranges from a clear or straw-colored fluid to a pultaceous material. Cholesterol crystals are frequently suspended in the luminal fluid²⁻⁵.

Both the external capsule and the internal septa of the cysts are composed of highly cellular and vascularized fibrous tissue⁴. The cyst wall is likely to be lined with

cuboidal, ciliated columnar, simple squamous or stratified squamous epithelium²⁻⁵. On occasion, the epithelial lining may be destroyed partly or completely by infection or hemorrhage^{3,5}. Characteristically, thymic epithelial elements and Hassall's corpuscles are found within or just adjacent to, the cyst wall, and lymphocytic aggregates or lymphoid follicles are frequently present in the wall²⁻⁵. In some cases Hassall's corpuscles may show cystic degeneration². In addition, variable amounts of inflammatory cellular infiltrate, cholesterol crystals surrounded by foreign body giant cells and fat-laden histiocytes have often been reported^{2,4,5}, but there is nothing in the literature about a malignant degeneration of a cervical thymic cyst⁵.

This present case of a cervical thymic cyst has most of the characteristic clinical and pathological features.

Summary

The case of a 6-year-old boy with a cervical thymic cyst on the right side of the neck is presented and the relevant literature is reviewed.

Cervical thymic cysts, being in most cases situated laterally on the neck, have often been confused with cystic masses in the neck. Seventy-five percent of the patients were less than 20 years old. Eighty percent complained of a painless mass. The histological diagnosis was made if thymic epithelial elements and Hassall's corpuscles could be found within and just adjacent to the cyst wall.

Our case is the 74th case of cervical thymic cyst in the literature.

REFERENCES

1. Benveniste GL, Holoyda A, Hamilton DW. Cervical thymic cyst: report of an unusual presentation of a rare lesion. *Aust NZ J Surg* 50:309, 1980.
2. Johnsen NJ, Bretlau P. Cervical thymic cysts. *Acta Otolaryngol* 83: 143, 1976.
3. Rosai J, Levine GD. Thymic cyst. In *Tumors of the Thymus* (Atlas of Tumor Pathology Second Series, fascicle 13). Washington DC: Armed Forces Institute of Pathology, 1976, pp 207-211.
4. Guba AM, Adam AE, Jaques DA, Chambers RG. Cervical presentation of thymic cysts. *Am J Surg* 136: 430, 1978.
5. Mikal S. Cervical thymic cyst. Case report and review of the literature. *Arch Surg* 109:558, 1974.
6. Snell RS. *Clinical Embryology for Medical Students* (2nd ed). Boston: Little, Brown and Co, 1975, p 128.
7. Pollosson A, Piery M. Un cas d'épithélioma primitif du thymus. *Prov Med Lyon* 15: 1, 1901.
8. Dehner LP. Thymic cysts. In *Pediatric Surgical Pathology*. St Louis: CV Mosby, 1975, p 187.